

No. 743,933.

PATENTED NOV. 10, 1903.

J. F. RUTH & E. PREISLER.
RANGE.

APPLICATION FILED JAN. 12, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

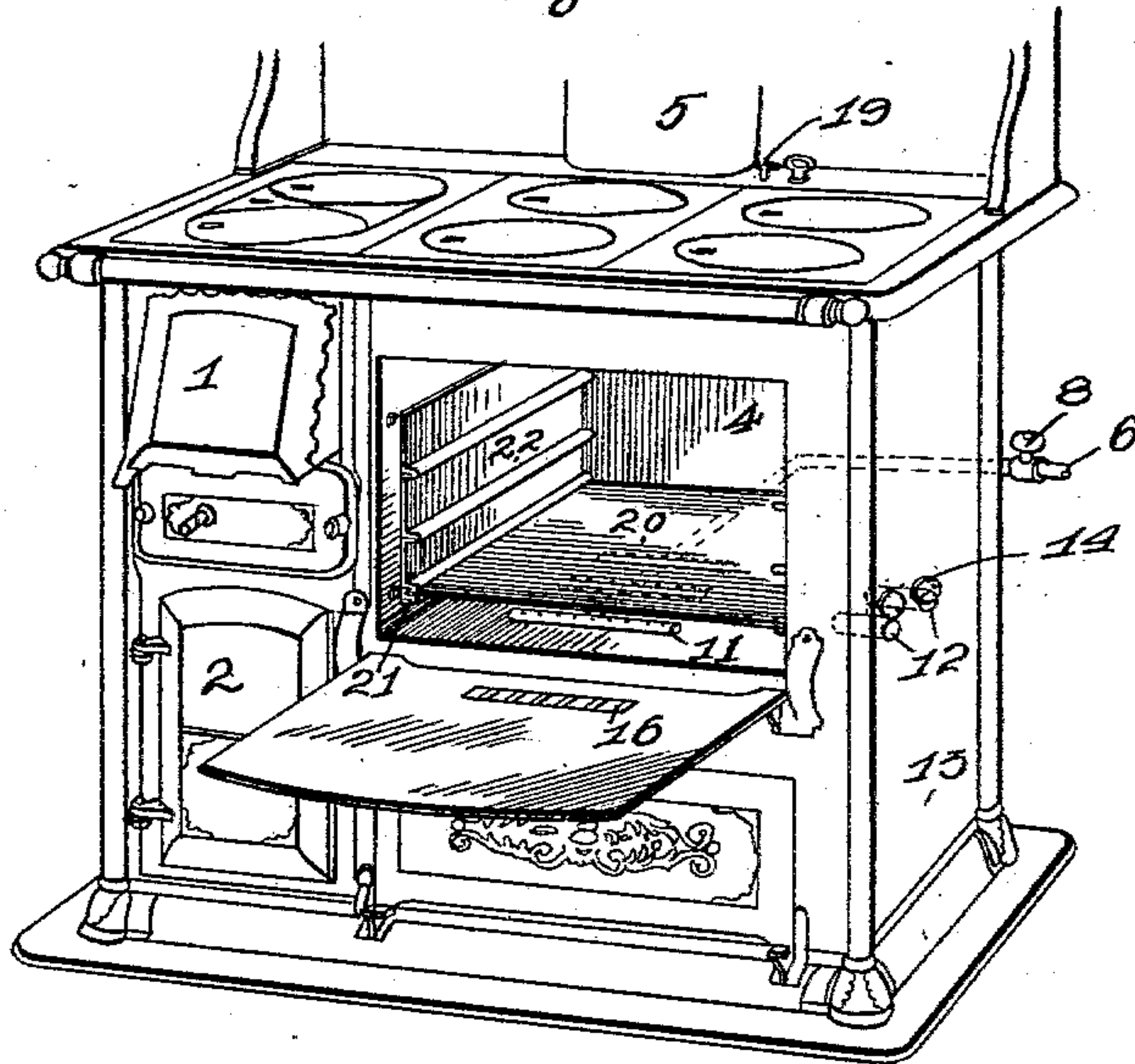
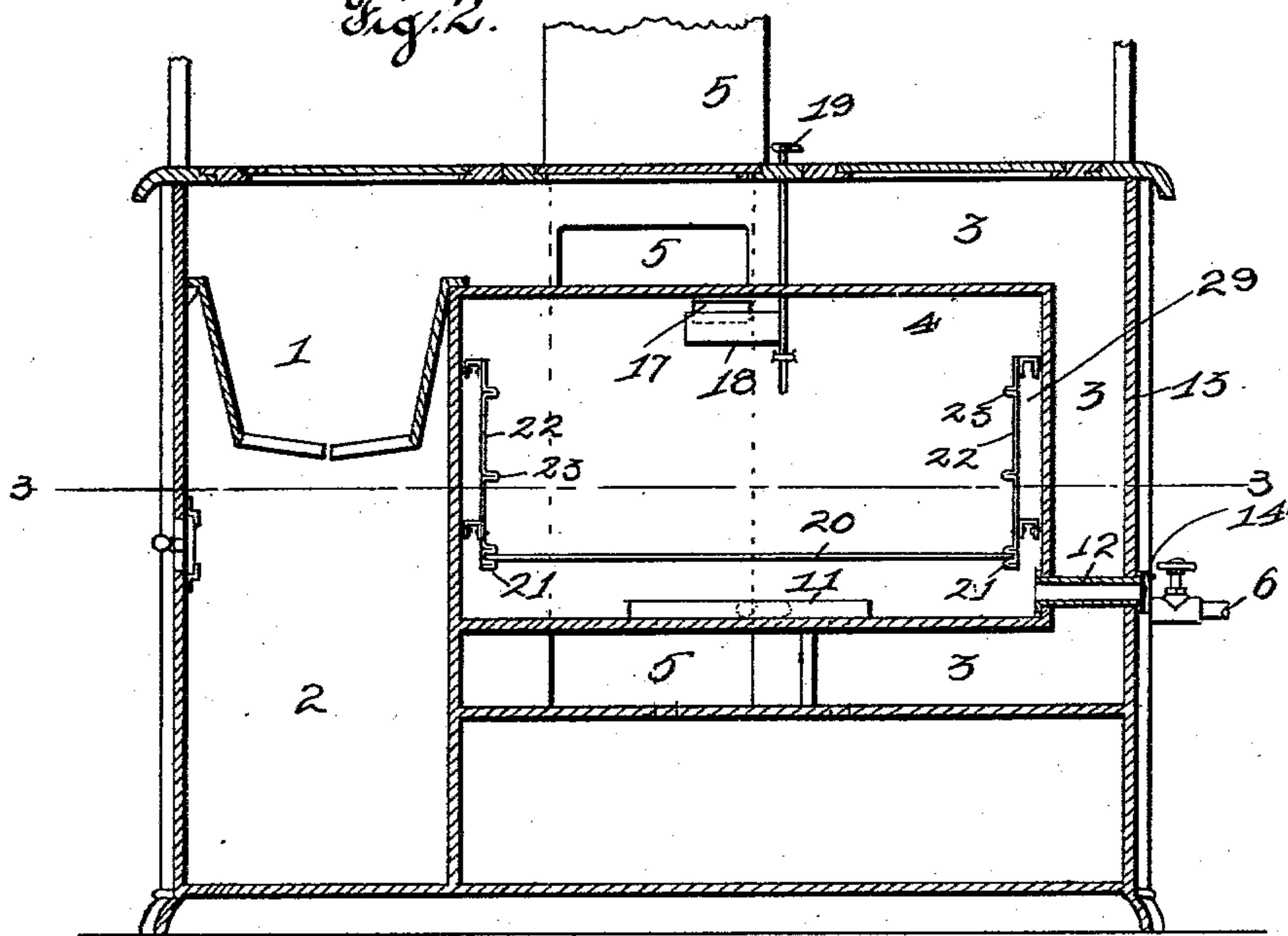


Fig. 2.



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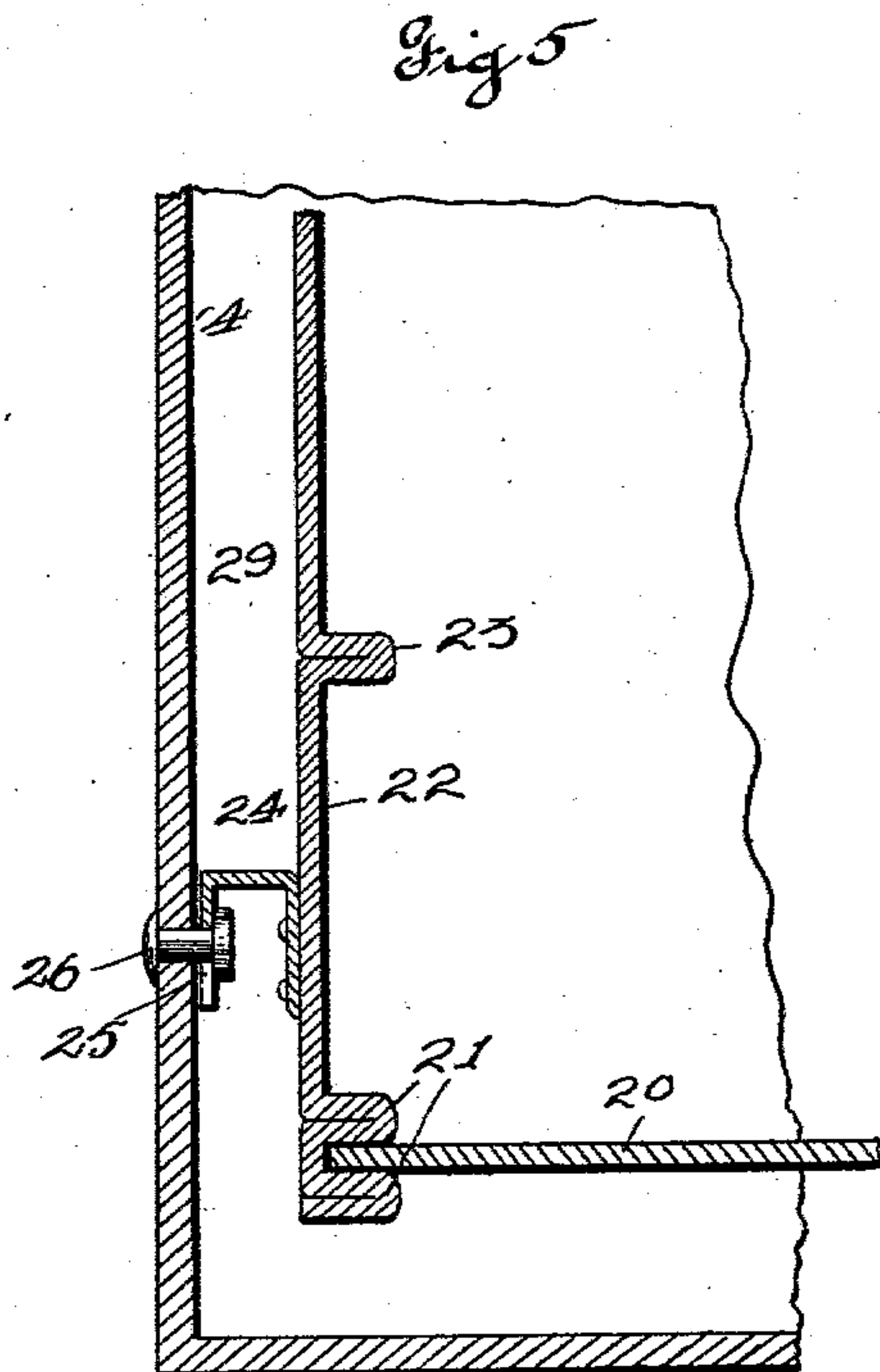
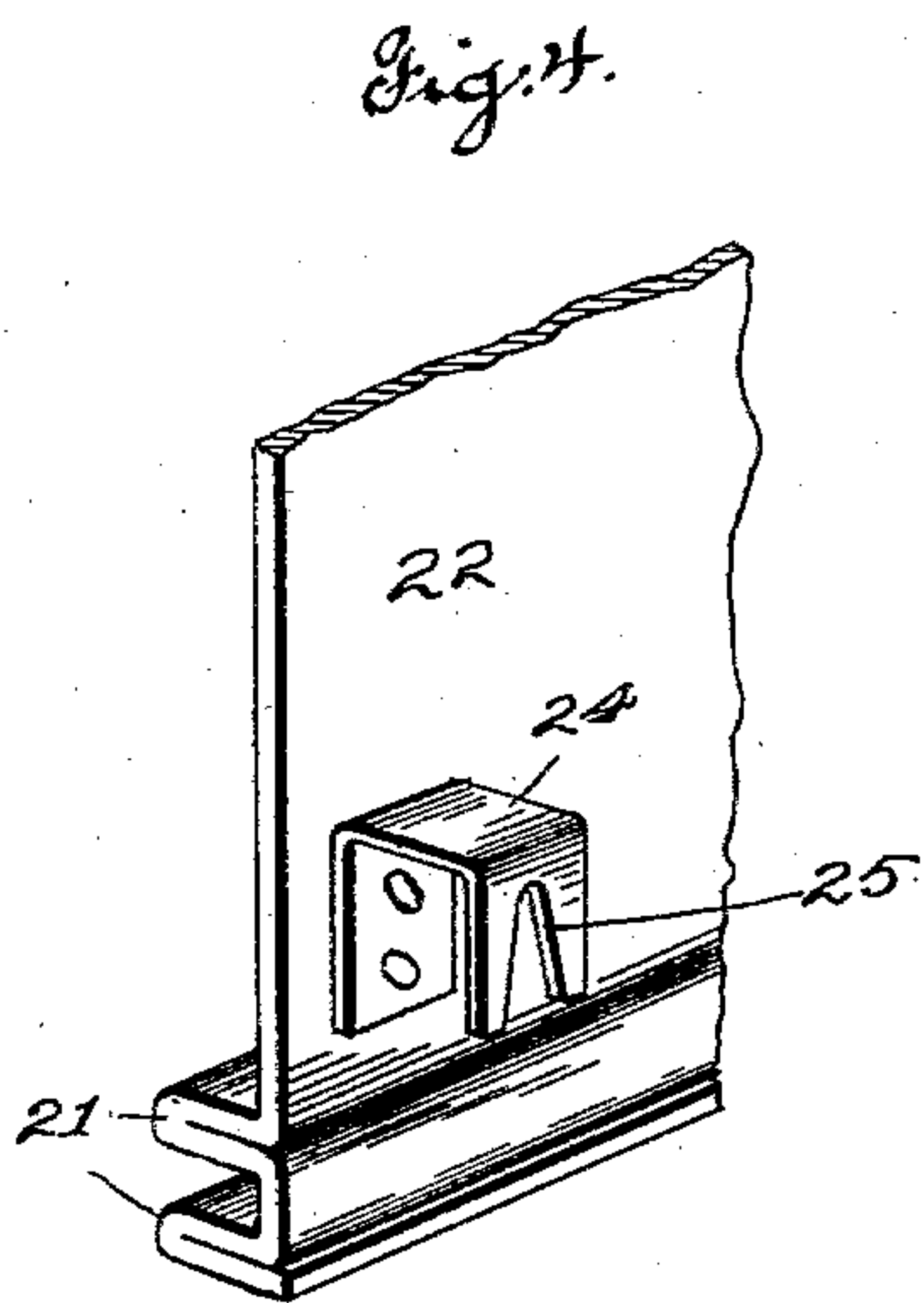
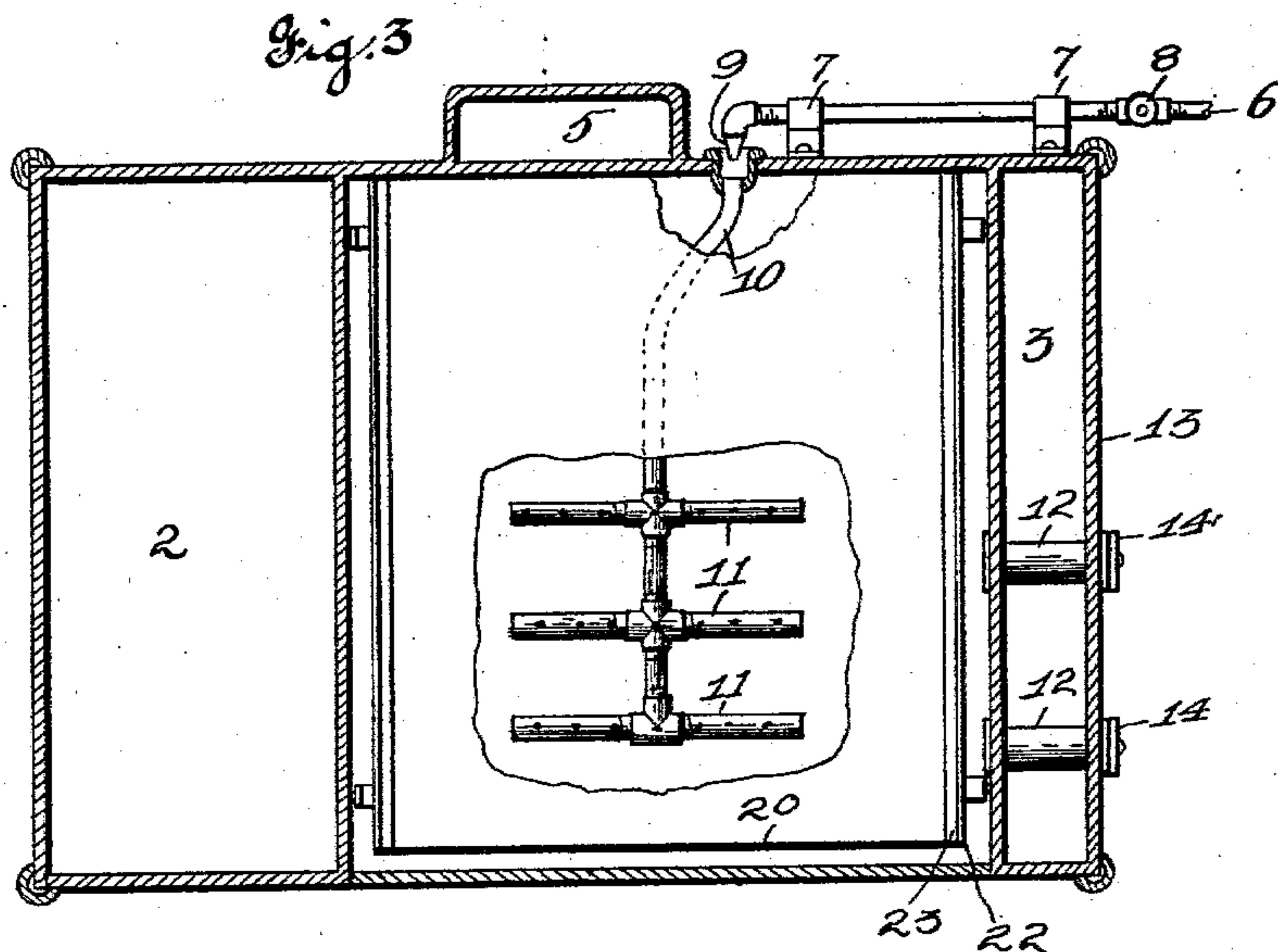
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

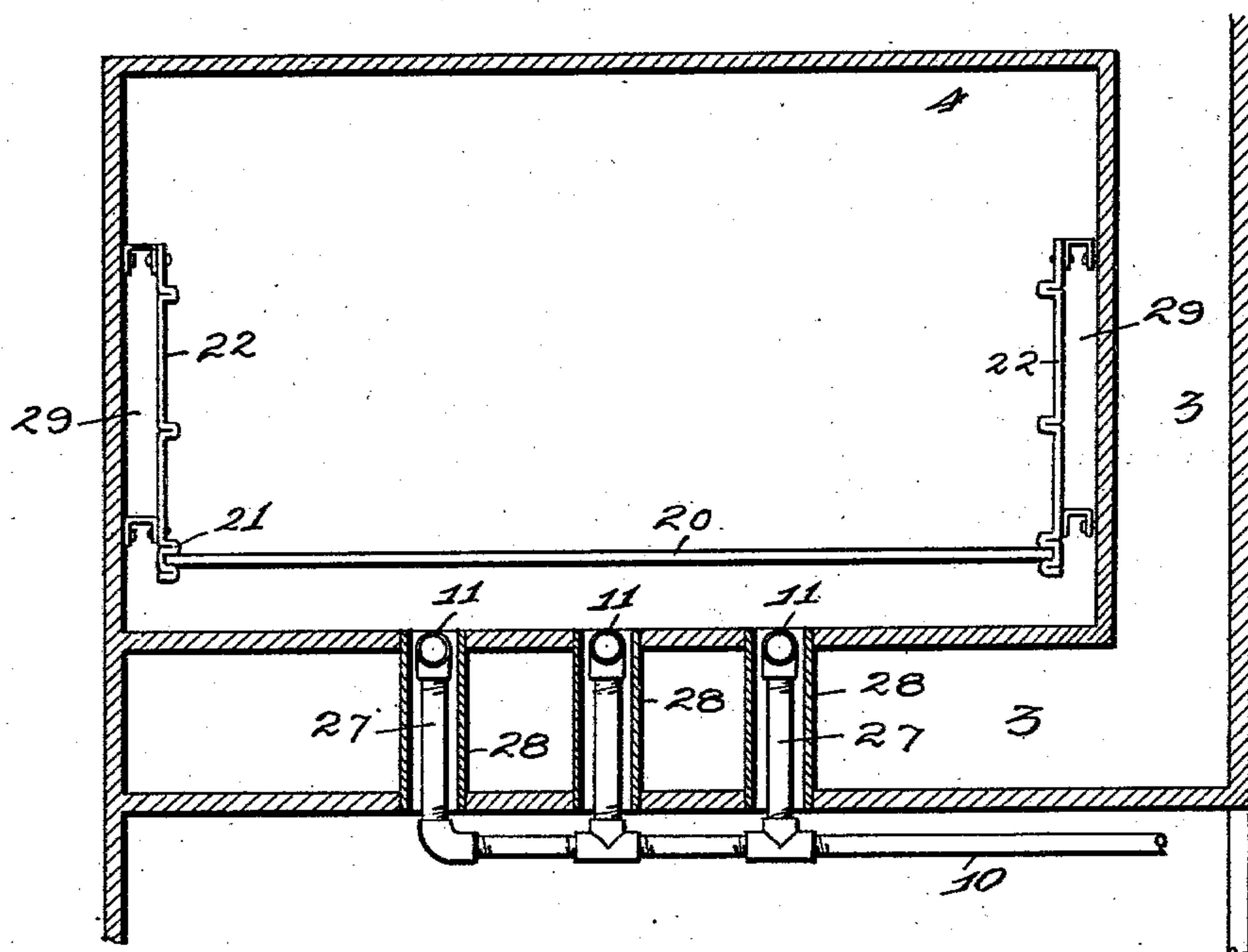
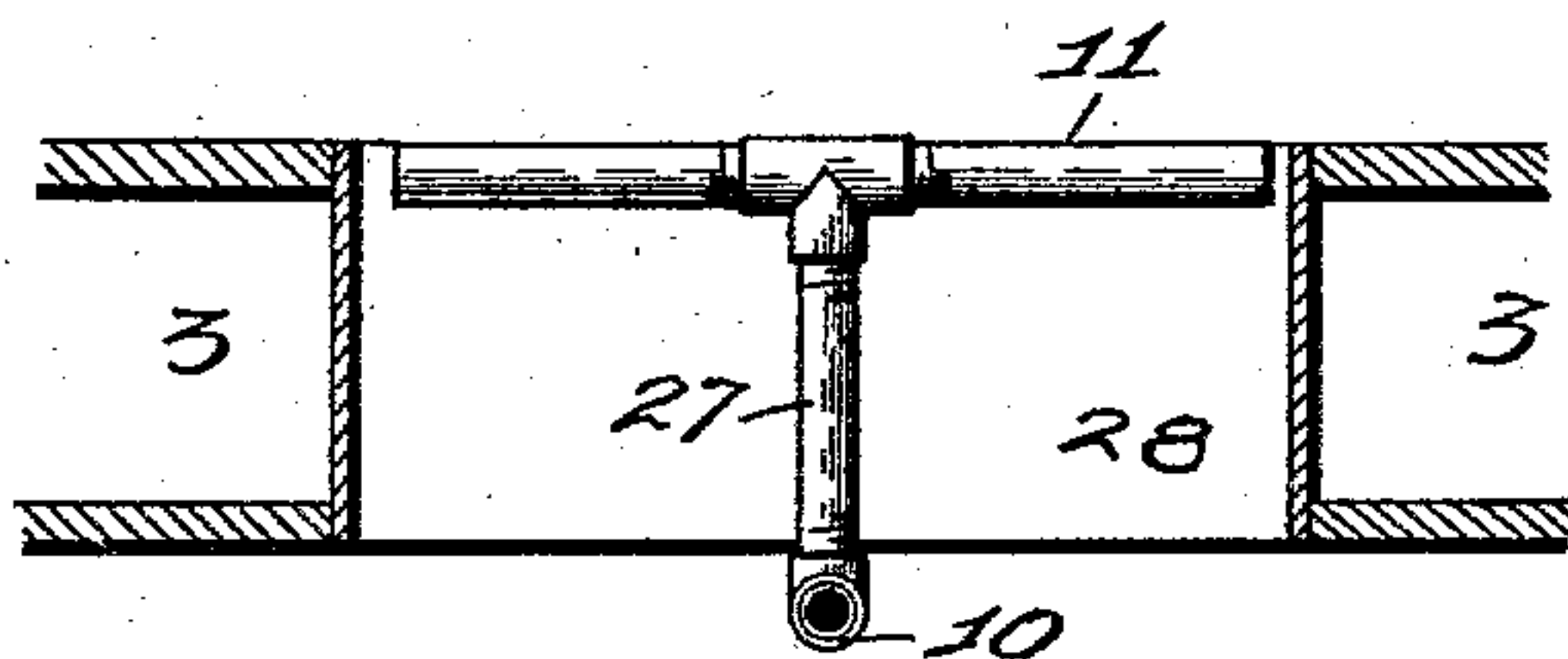


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN F. RUTH AND ERNST PREISLER, OF ST. LOUIS, MISSOURI.

RANGE.

SPECIFICATION forming part of Letters Patent No. 743,933, dated November 10, 1903.

Application filed January 12, 1903. Serial No. 138,652. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. RUTH and ERNST PREISLER, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Ranges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to ranges; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of our invention is to provide an improved coal, wood, and gas range, the parts of which may be heated by either species of fuel and in which both gas and solid fuel may be burned at the same time.

A further object of our invention is to provide improved means whereby the oven of an ordinary coal or wood range may be quickly converted into one which will give satisfactory results when gas is used as fuel.

A further object of our invention is to provide improved means whereby the oven of an ordinary coal and wood range may be readily changed into one in which gas may be burned simultaneously with coal or wood.

Figure 1 is a perspective view of a range embodying our invention. Fig. 2 is a longitudinal sectional view showing the internal details. Fig. 3 is a horizontal sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a detail view showing in perspective a portion of one of the removable side partitions and its supporting-hook. Fig. 5 is a detail sectional view of a portion of the oven, enlarged, and having one of the side partitions and a removable bottom therefor. Fig. 6 is an enlarged sectional elevation of portions of the oven and illustrating a modified construction of the burner beneath the oven. Fig. 7 is a detail view showing a portion of said modified construction.

Referring to the drawings, 1 indicates the usual fire-box, which is constructed and adapted to operate with either wood or coal or any other solid fuel.

2 indicates the ash-chamber beneath the fire-box. The usual passages 3 are provided for the products of combustion and which passages extend from the top of the oven 4 downwardly along the rear end thereof and

beneath the under side of said oven and outwardly through the flue 5.

6 indicates a gas-supply pipe, which is preferably secured by means of brackets 7 to the back of the range and is provided with any suitable valve, such as 8, for controlling the supply of gas. Said gas-supply pipe is provided with a jet 9, which discharges into the usual mixing-pipe 10, and thereby supplies the proper mixture of gas and air to the burner 11, which preferably rests upon the bottom of the oven, as shown in Figs. 1, 2, and 3, but which may of course be located in a slot, opening, or depression formed in the bottom of the oven, as shown in the modified construction of Figs. 6 and 7, and which will be described in detail farther on.

The burner 11 may consist of any known form; but in the present instance it is composed of numerous lateral branches of pipe provided with small holes for the issuance of the combustible fluid.

In the construction shown in the first three figures of the drawings the burner 11, within the oven, is supplied with fresh air by means of one or more passages 12, extending through the rear end of the oven-wall and through the exterior wall 13 and provided upon their outer ends with common pivoted caps or dampers 14, by means of which the entrance of air may be regulated. The supply of fresh air to the burner within the oven may of course be had in any common manner. For instance, we may provide suitable openings 16 in the oven-door for the ingress of air.

To create circulation in the oven and also to discharge the smoke and odors produced by the baking operation under certain circumstances, we provide a small opening 17 in the rear side of the oven communicating with the flue 5. This opening is controlled by a common slide or damper 18, operated by means of a handle 19, located upon the exterior of the range. The air-supply openings to the ovens should of course be closed when the burner is not in use and the oven is being heated by coal or wood. If the openings 16 in the oven-door are made use of, they should of course be controlled by a common slide, and this is what we have illustrated in Fig. 1.

Mounted above the burner 11, within the oven 4, is a removable plate 20, the purpose

of which is to transform the oven into a gas-oven when it is desired to use gas instead of solid fuel. Said plate 20 may be mounted above the burner in any suitable manner; but we prefer to loosely mount the same in slides or guides 21, preferably formed by bending the metallic side partitions 22, as shown in Figs. 4 and 5. Said side partitions are arranged opposite each other, one preferably adjacent the fire-box end of the oven and the other at the opposite end of said oven, as shown, and they may be provided with a series of slides or projections, such as 23, upon which the usual grates and similar oven attachments may be supported. Said side partitions 22 may be permanently secured in position by means of suitable bolts or rivets or may be secured, as herein shown, by means of suitable bifurcated hooks 24, one end of which is riveted to the said side partitions and the opposite end of which is provided with a vertical fork 25, which removably engages a projecting rivet or bolt 26. (See Figs. 5 and 6.) By this means the side partitions may be readily detached at any time when solid fuel is to be used for any considerable length of time. Their removal also slightly enlarges the oven.

In the modified construction of Figs. 6 and 7 the burner is made in a number of sections, each having a branch pipe 27 extending from the mixing-pipe 10, and each of said sections and its branch pipe is located within the separate slot 28, formed in the bottom of the oven and extending downwardly through the smoke-passage 3 and opening upon the exterior of the smoke-passage directly beneath the oven. Of course the number of slots will be increased or diminished in accordance with the number of sections of burner made use of.

By means of the construction last described it will obviously be unnecessary to provide any means for supplying fresh air to the oven other than that provided by the said slots themselves.

The removable plate 20, in connection with the side partitions 22, acts as a flame-spreader for the burners beneath, and it also acts to cause circulation in the oven, the heated air passing upwardly through the space 29 between the side partitions and the vertical walls of the oven.

An important feature of our improved range is that only one oven is required, and this oven may be used with equal advantage by using either coal or gas for fuel. It is also clear that we may burn both coal and gas simultaneously to heat the oven, since the gas-burner is entirely within the oven and is therefore protected from the smoke in the smoke-passage and does not interfere with the passage of smoke to its outlet. By this construction greater heat may be obtained in a short time than is possible in an ordinary range capable of using only one fuel at any one time. The entire range is very compact, no unnecessary parts are made use of, and in

construction it is comparatively simple. In these and other respects our improved range presents many advantages over those of ordinary construction.

We claim—

1. In a combined gas and coal range, a transformable oven having the usual fixed bottom and fitted with an additional detachable bottom in the form of a sliding impervious plate, normally supported a distance above said fixed bottom, in combination with partitions forming vertical gas-passages, and slides at the edges of said plate, whereby the latter is adapted to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, at the will of the operator, substantially as and for the purpose herein specified.

2. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, an additional but detachable entire oven-bottom mounted in slides in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, at will, and vertical partitions forming gas-passages at opposite edges of said detachable bottom, substantially as specified.

3. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, an additional but detachable entire oven-bottom mounted in slides in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, at will; vertical partitions forming gas-passages at opposite edges of said detachable bottom, and means for supplying air and gas to said burner through the walls of said oven, substantially as specified.

4. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, an additional but detachable entire oven-bottom mounted in slides in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, at will; vertical partitions forming gas-passages at opposite edges of said detachable bottom, means for supplying air and gas to said burner through the walls of said oven; and an exit for smoke and odors connected to the flue of the range, substantially as specified.

5. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, constructed with a slot providing an air-passage separate from but extending through the smoke-pas-

sage of the range, an operative burner located in said slot, an additional but detachable entire oven-bottom mounted in slides in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, and vertical partitions forming gas-passages at opposite edges of said detachable bottom, substantially as specified.

6. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, constructed with a slot providing an air-passage separate from but extending through the smoke-passage of the range, an operative burner located in said slot, an exit for smoke and odors connected to the flue of the range, an additional but detachable entire oven-bottom mounted in slides in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, and vertical partitions forming gas-passages at opposite edges of said detachable bottom, substantially as specified.

7. An improved gas and coal heated oven provided with imperforate and unbroken fixed opposite vertical side partitions arranged therein with a direct gas-passage between said side partitions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, and a removable plate mounted in slides at the lower edges of said partitions, substantially as specified.

8. An oven having the usual fixed bottom and provided with imperforate and unbroken opposite vertical side partitions fixed therein with a direct gas-passage between said side partitions and the adjacent walls of the oven, means for securing said partitions to the oven-walls, and an additional but detachable entire oven-bottom mounted in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, substantially as specified.

9. An oven having the usual fixed bottom and provided with imperforate and unbroken opposite vertical side partitions fixed therein with a direct gas-passage between said side partitions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, an additional but detachable entire oven-bottom mounted in said oven above said burner and arranged to be bodily removed when said oven is transformed from a gas-oven to a coal-heated oven, and a suitable support for said removable oven-bottom near the lower edge of said side partitions, substantially as specified.

10. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said usual oven independently of the heat supplied from said fire-box, opposite vertical side partitions disconnected from each other and fixed in said oven with a direct gas-passage between said side parti-

tions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, and a removable plate separate from the sides and mounted in slides in said oven adjacent the lower edges of said partitions, substantially as specified.

11. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, opposite vertical side partitions disconnected from each other and fixed in said oven with a direct gas-passage between said side partitions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, a removable plate separate from the sides and mounted in said oven adjacent the lower edges of said partitions, and slides for said removable plate formed in the said vertical partitions near the lower edge of the latter, substantially as specified.

12. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, opposite vertical side partitions disconnected from each other and fixed within said oven with a gas-passage between said side partitions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, a removable plate separate from the sides and mounted in slides formed in the lower edges of said partitions, means for supplying air and gas to said burner through the walls of said oven, and an exit for smoke and odors connected to the flue of the range, substantially as specified.

13. An improved combined gas and coal range, comprising the usual fire-box and oven, the latter having a fixed bottom, a gas-burner arranged to heat said oven independently of the heat supplied from said fire-box, opposite vertical side partitions disconnected from each other and fixed within said oven with a gas-passage between said side partitions and the adjacent wall of the oven, means for securing said partitions to the oven-walls, a removable plate separate from the sides and mounted in said oven adjacent the lower edges of said partitions, a suitable set of slides for said removable plate near the lower edge of said side partitions, means for supplying air and gas to said burner through the walls of said oven, and an exit for smoke and odors connected to the flue of the range, substantially as specified.

14. An improved combined coal and gas range, comprising the usual fire-box and oven, the latter having a fixed bottom, constructed with a slot formed in the bottom of the oven and providing an air-passage separate from but extending through the smoke-passage of the range, an operative burner located in said slot, opposite vertical side partitions arranged in said oven to form gas-passages therein,

and an additional but detachable entire oven-
bottom mounted in said oven above said
burner, supported by slides upon said side
partitions, and arranged to be bodily removed
5 when said oven is transformed from a gas-oven
to a coal-heated oven, substantially as speci-
fied.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

JOHN F. RUTH.
ERNST PREISLER.

Witnesses:

ALFRED A. EICKS,
JOHN C. HIGDON.